extraction technique employed is to use carbon dioxide to remove or dry the fluid on the semiconductor substrate.

The need for a simple, mechanically non-invasive system to accomplish the placement and removal of immersion fluid for the universal family of microscopes employing immersion optics remains an unsatisfied task.

3. DETAILED DESCRIPTION

Figure 1 is a functional diagram of the dispensing system for an inverted microscope. The desired immersion fluid is contained in the reservoir 1. Whenever the peristaltic driver is actuated, fluid is drawn into the peristaltic processing chamber 2 and pushed out through the dispensing port 3.
The mechanical actuator is a two-stage device with an upper section 4 and a lower section 5. Both sections share a common pivotal axis. The upper section contains a constrained spring 6 that initially forces the upper section to rotate in concert with the lower section.
As the flexible driving plunger7 is initially displaced, it rotates the complete assembly about the pivot and positions the output port of the fluid dispenser into position above the front objective lens 8. At this point, the upper section encounters the fixed stop 9 and ceases rotating. Further displacement of the plunger causes the lower section to overcome the spring's static force. The lower section continues to rotate and a linear actuator 10 drives the ratcheting roller bearing assembly 11. By peristaltic action, the immersion fluid is squeezed from the peristaltic chamber 12 out through the dispenser outlet port.
The fluid removal process mimics the mechanical positioning events of the dispensing cycle. However, when the coaxial arm 13 is in position over the lens, a vacuum source is activated at the vacuum port 14 that causes the previously deposited fluid to be extracted from the lens surface.
For upright microscope systems, the same operational sequence of events would be invoked. However, the fluid would be deposited on the specimen slide rather than the objective lens surface.

Claims

What is claimed is:

1. An immersion fluid dispenser for microscopes comprising:
a remotely located delivery system that does not require an alteration or mechanical attachment to the microscope's optical components.

2. The immersion dispenser of claim 1 further comprising:
a configuration wherein the dispenser is mechanically attached to the non-moving section of a microscope's stage.